FIG. 1
(Related Art)

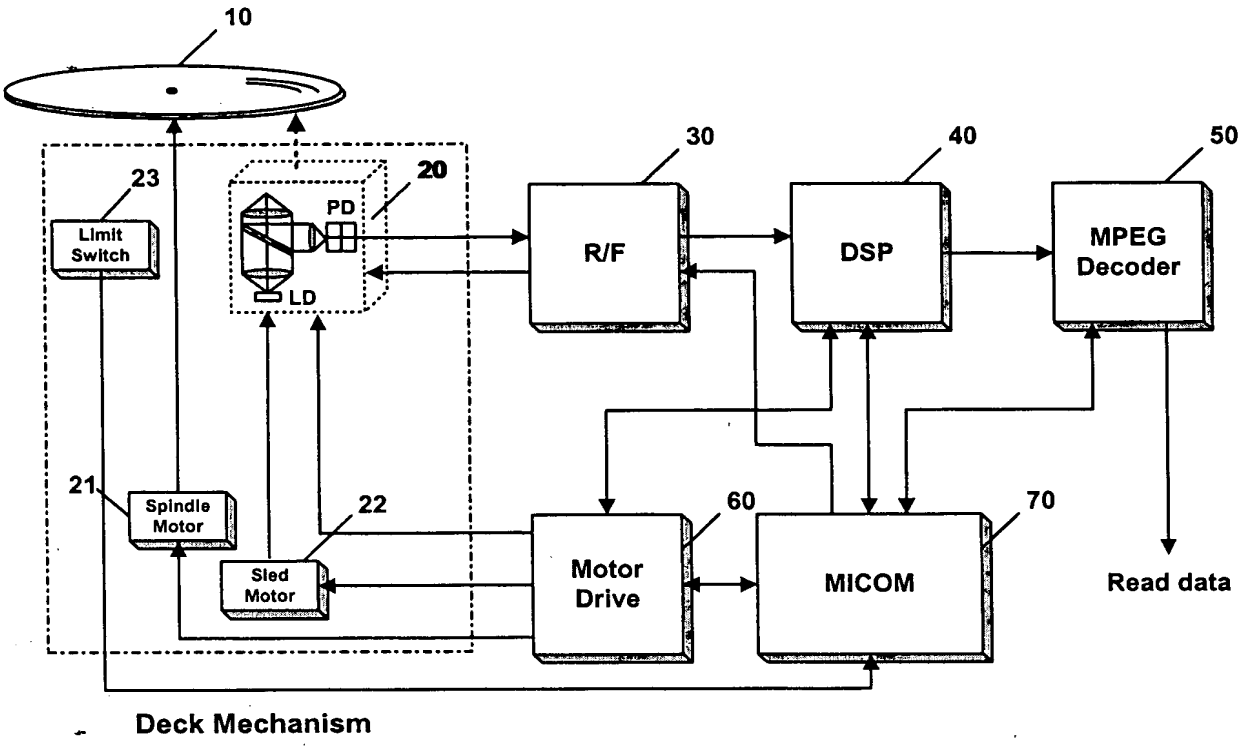


FIG. 2

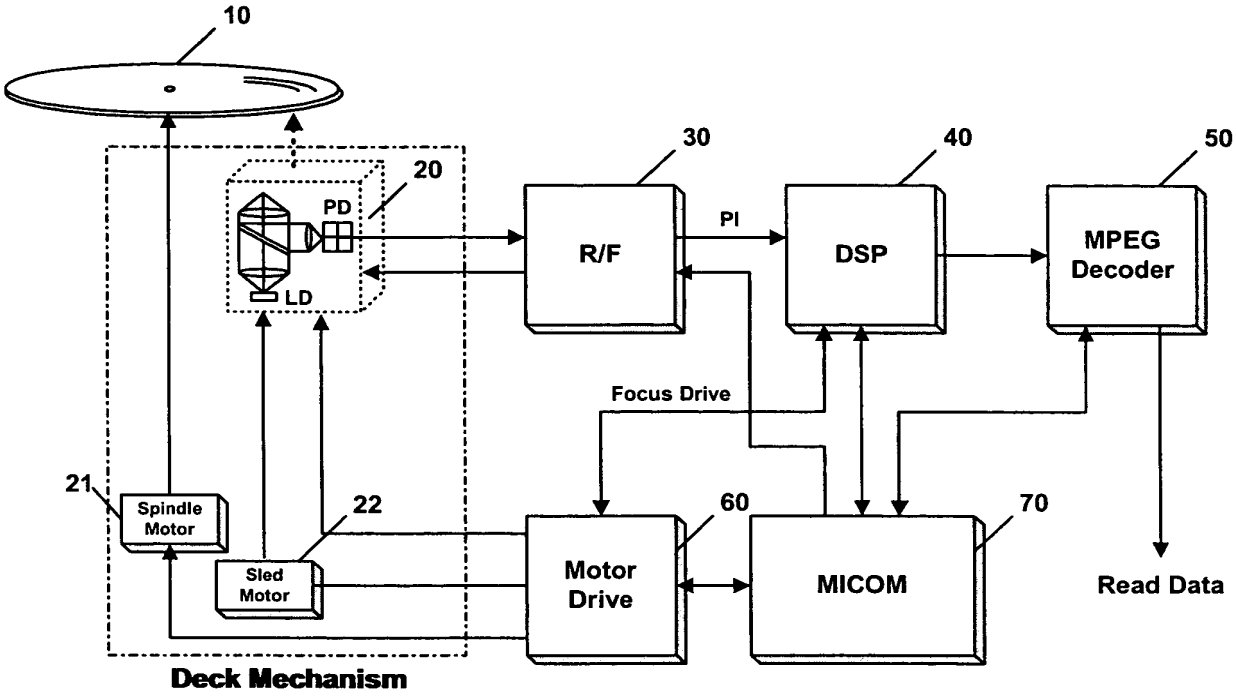

10
20
PD
LD
30
R/F
PI
40
DSP
50
MPEG
Decoder
Focus Drive
21
Spindle
Motor
22
Sled
Motor
60
Motor
Drive
70
MICOM
Read Data
Deck Mechanism

FIG. 3

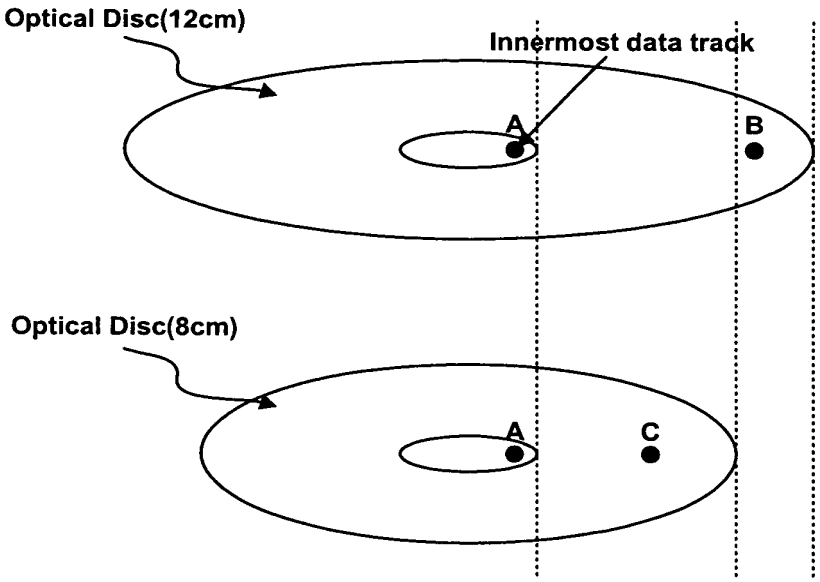

Optical Disc(12cm)
Innermost data track
A
B
Optical Disc(8cm)
A
C

FIG. 4a

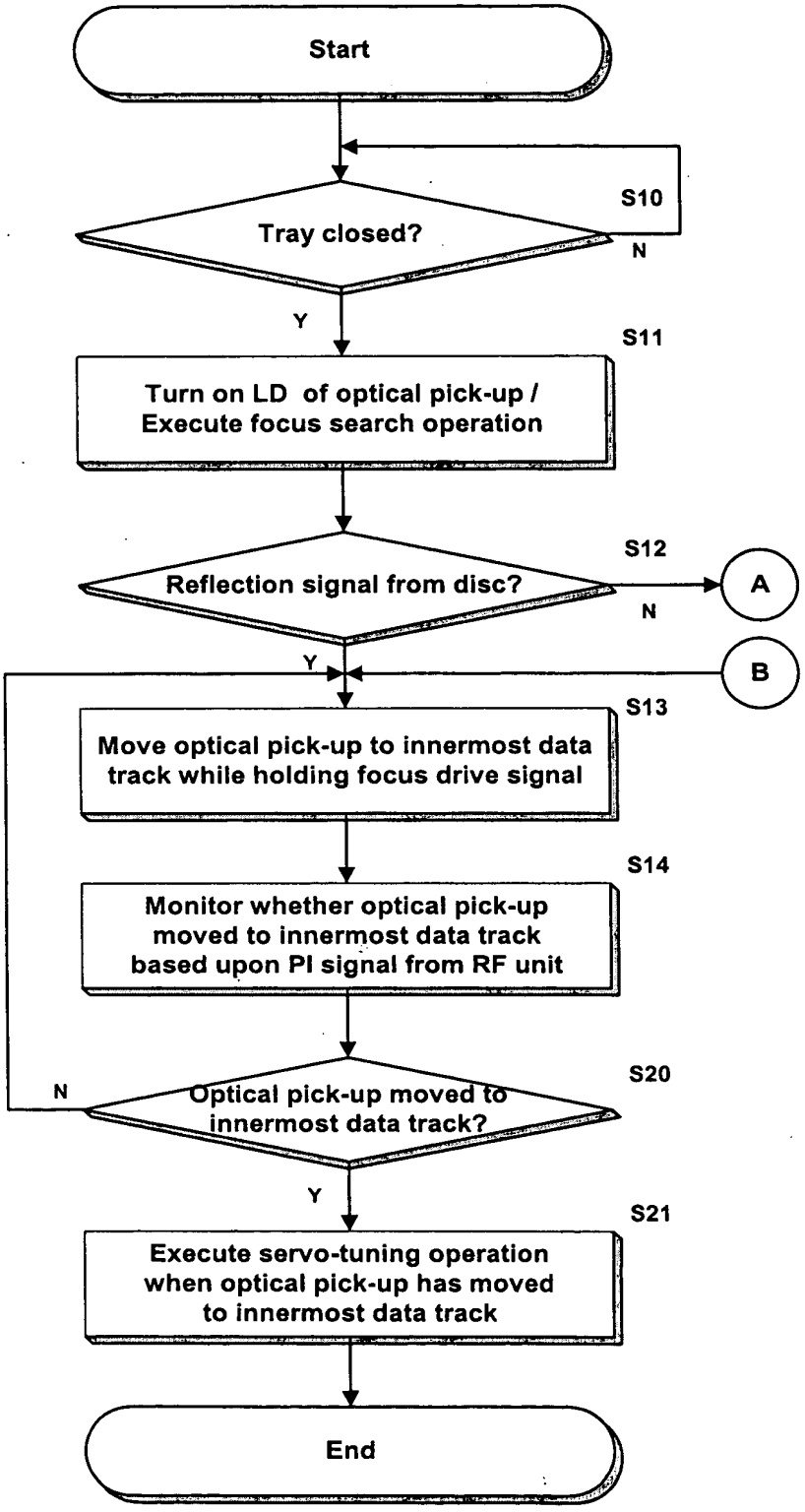

Start
S10
Tray closed?
N
Y
S11
Turn on LD of optical pick-up / Execute focus search operation
S12
Reflection signal from disc?
A
N
Y
B
S13
Move optical pick-up to innermost data track while holding focus drive signal
S14
Monitor whether optical pick-up moved to innermost data track based upon PI signal from RF unit
S20
N
Optical pick-up moved to innermost data track?
Y
S21
Execute servo-tuning operation when optical pick-up has moved to innermost data track
End

FIG. 4b

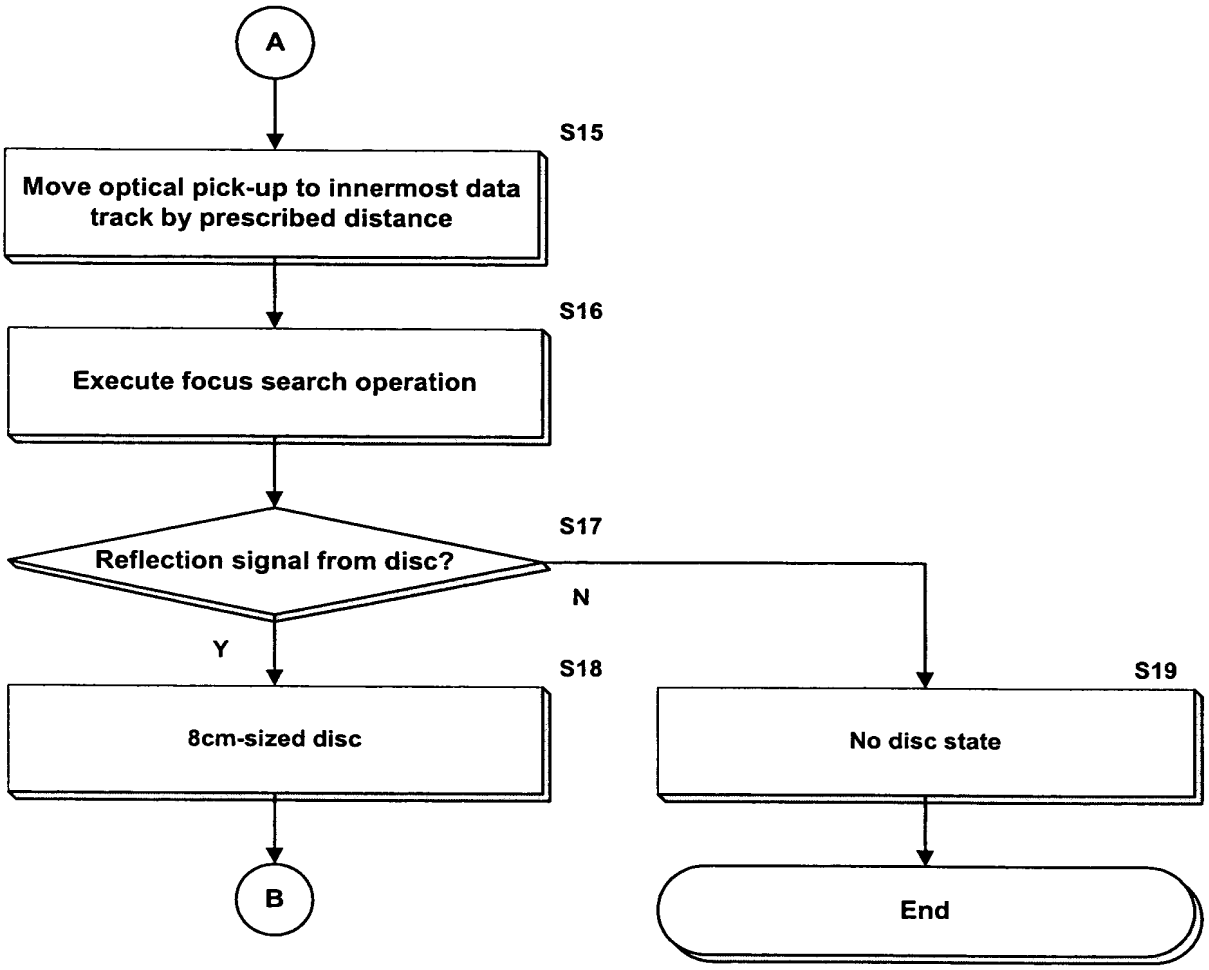

A
S15
Move optical pick-up to innermost data track by prescribed distance
S16
Execute focus search operation
S17
Reflection signal from disc?
N
Y
S18
8cm-sized disc
S19
No disc state
B
End

FIG. 5

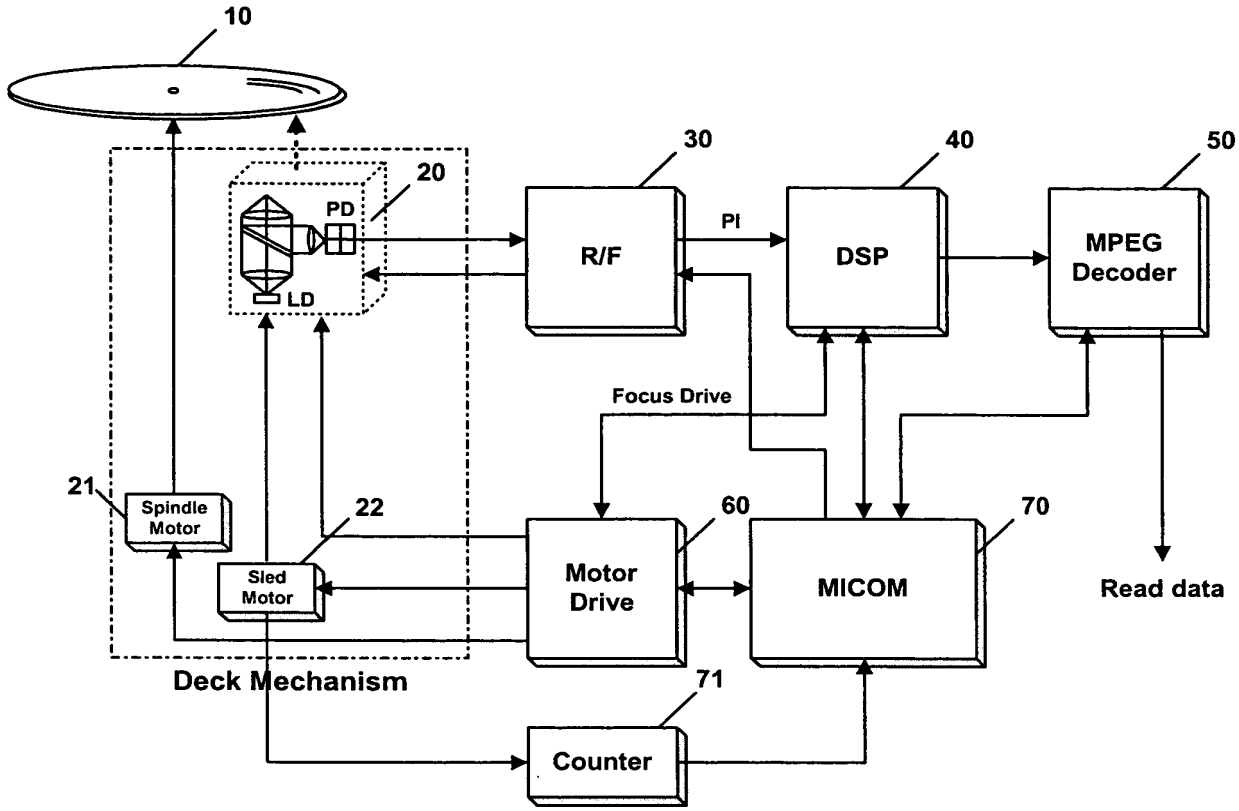

10
20
PD
LD
30
R/F
PI
40
DSP
50
MPEG Decoder
Focus Drive
21
Spindle Motor
22
Sled Motor
60
Motor Drive
70
MICOM
Read data
Deck Mechanism
71
Counter

FIG. 6

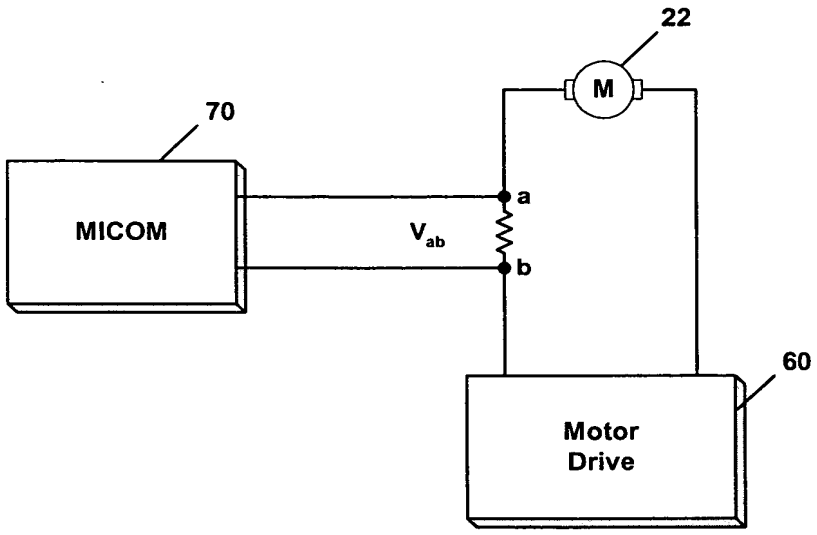


FIG. 7

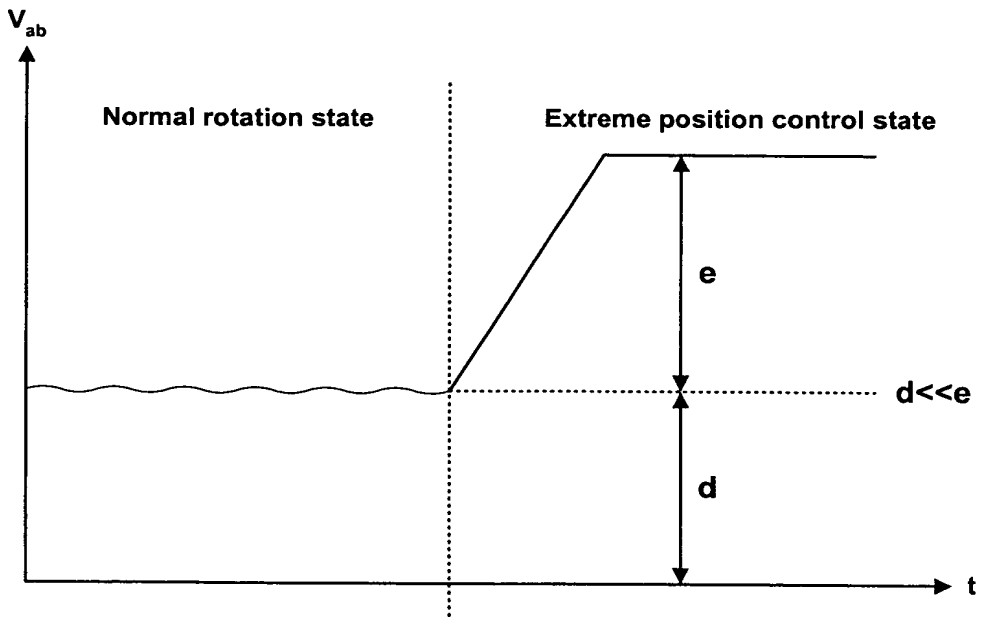
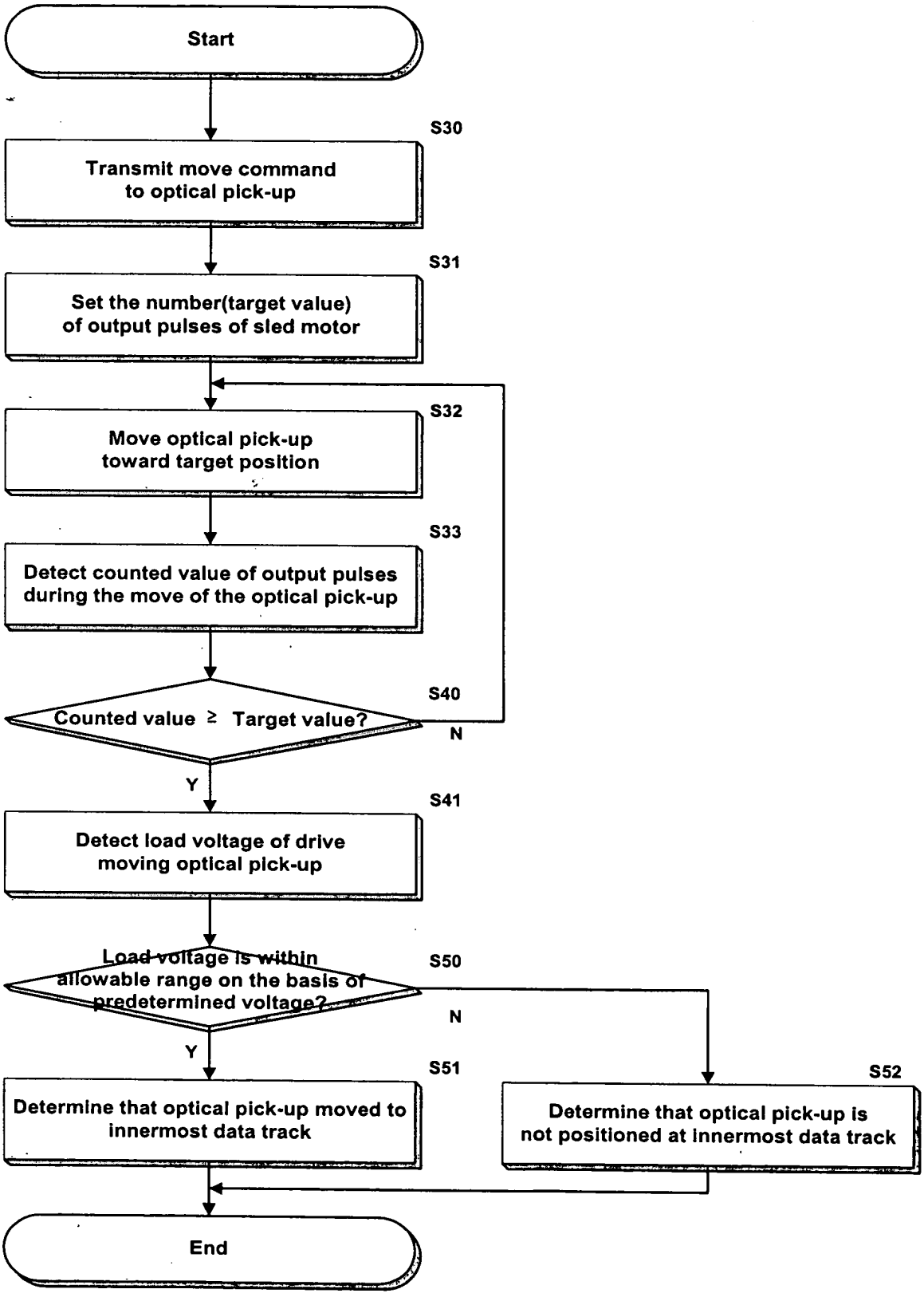

V_{ab}
Normal rotation state
Extreme position control state
e
d<<e
d
t

FIG. 8


Start
S30
Transmit move command to optical pick-up
S31
Set the number(target value) of output pulses of sled motor
S32
Move optical pick-up toward target position
S33
Detect counted value of output pulses during the move of the optical pick-up
S40
Counted value ≥ Target value?
N
Y
S41
Detect load voltage of drive moving optical pick-up
S50
Load voltage is within allowable range on the basis of predetermined voltage?
N
Y
S51
Determine that optical pick-up moved to innermost data track
S52
Determine that optical pick-up is not positioned at innermost data track
End